

TABLE 5

| REFERENCE | Wet Web Release from Ceramic Press Roll Cover Material | | | | | |
|-------------------------|--|--------------|-------------------|--------------|-------------------|--------------|
| | FURNISH 1 | | | | FURNISH 2 | |
| | Web Pressed Once | | Web Pressed Twice | | Web Pressed Once | |
| | Release Force N/m | Web Solids % | Release Force N/m | Web Solids % | Release Force N/m | Web Solids % |
| Blank - soak | 2.4 | 36 | 2.6 | 46 | 1.0 | 41 |
| Blank - spray | 1.3 | 36 | 1.8 | 46 | 1.1 | 43 |
| L-6, 1 ppm - soak | 1.9 | 37 | 2.6 | 46 | 0.9 | 41 |
| L-6, 10 ppm - soak | 2.1 | 37 | 2.5 | 46 | | |
| L-6, 100 ppm - soak | 1.9 | 38 | 2.4 | 47 | 0.8 | 42 |
| L-6, undiluted - spray | 1.6 | 41 | 1.6 | 49 | 1.3 | 44 |
| L-7, 10 ppm - soak | 2.1 | 36 | 2.2 | 46 | 0.9 | 41 |
| L-7, 100 ppm - soak | 2.1 | 37 | 2.2 | 47 | | |
| L-7, 1000 ppm - soak | 1.3 | 37 | 2.0 | 47 | 1.0 | 42 |
| L-7, undiluted - spray | 2.0 | 35 | 2.5 | 47 | 1.4 | 42 |
| PB-6, undiluted - spray | 0.5 | 42 | 0.4 | 50 | 0.4 | 46 |

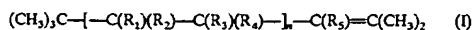
The polybutene blend outperformed the microemulsions. Note also that the spray addition of the concentrated microemulsion (L-6) and the polybutene blend (PB-6) produced higher web solids. This demonstrates an additional advantage of reducing the water carried with the roll surface by replacing the water shower with polybutene.

Example 5

A short experiment was conducted on the center press roll of a paper machine that commonly experiences a high degree of press roll picking. A water shower just prior to the first doctor blade was turned off for the experiments. Product L-7 and PB-6 were compared by spraying them, undiluted, on the roll surface prior to the doctor blade to observe the effect on picking and on the release point from the roll. Picking was greater during application of product L-7 than during that of PB-6. The point of release remained unchanged for L-7 but trended downward (improved release) during the PB-6 experiment.

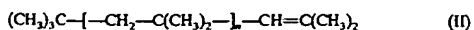
What is claimed is:

1. A method of reducing adhesion to a surface of equipment used in paper manufacture or in paper converting processes, said method characterized in applying to such surface a non-aqueous composition comprising one or more non-curing hydrocarbon polymers having the formula

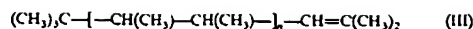


or hydrogenates thereof, wherein R_1 through R_5 are hydrogen or $-CH_3$, with at least one of R_1 through R_4 being $-CH_3$, and n is such that the number average molecular weight of such hydrocarbon polymers is from 50 112 to 3000.

2. The method according to claim 1 wherein the one or more non-curing hydrocarbon polymers have the formulas



or



or hydrogenates thereof.

3. The method according to claim 1 wherein the non-curing hydrocarbon polymers have a number average molecular weight from 100 112 to 1000.

4. The method according to claim 1 wherein the non-curing hydrocarbon polymers comprise at least one component having a number average molecular weight from 400 to 700.

5. The method according to claim 4 wherein the non-curing hydrocarbon polymers comprise at least one second such component having a number average molecular weight from 100 112 to 400.

6. The method according to claim 1 wherein the non-aqueous composition further includes one or more non-aqueous solvents.

7. The method according to claim 6 wherein the non-aqueous solvents are selected from mineral oil, white oil and petroleum distillate.

8. The method according to claim 1 wherein the non-aqueous composition further includes one or more hydrophobic additives.

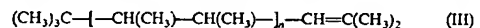
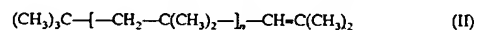
9. The method according to claim 8 wherein the hydrophobic additives are selected from paraffin wax, microcrystalline wax, petrolatum gel and fatty amide wax.

10. The method according to claim 1 wherein the non-aqueous composition is applied to the surface of press rolls.

11. The method according to claim 1 wherein the non-aqueous composition is applied to the surface of press rolls, lump-breaker rolls, couch rolls, uhle box covers, dryer cans, calender rolls, corrugating fluting rolls, or papermaking fabrics.

12. The method according to claim 1 wherein the amount applied and manner of application are sufficient to maintain a uniform coating of the non-aqueous composition on the equipment surface during operation.

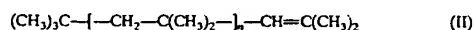
13. A method of reducing adhesion to a surface of equipment used in paper manufacture or in paper converting processes, said method characterized in applying to the equipment surface a non-aqueous composition comprising one or more non-curing polybutenes having the formulas



or hydrogenates thereof, wherein n is such that the number average molecular weight of such non-curing polybutenes is from 50 112 to 3000.

14. The method according to claim 13 wherein the number average molecular weight of such non-curing polybutenes is from 100 112 to 1000.

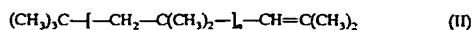
15. The method according to claim 13 wherein the non-curing polybutenes have the formula



or hydrogenates thereof.

16. The method according to claim 13 wherein the non-aqueous composition comprises

a) from 20 to 100 percent by weight of hydrogenated or non-hydrogenated, non-curing polybutenes of the formula



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with a number average molecular weight from 400 to 700; and

(b) from 0 to 80 percent by weight of one or more components selected from

- (i) a non-curing polybutene of the formula (II) with a number average molecular weight from 100 112 to 400,
- (ii) one or more non-aqueous solvents; and
- (iii) one or more hydrophobic additives.

17. The method according to claim 16 wherein the non-aqueous solvents are selected from mineral oil, white oil and petroleum distillate.

18. The method according to claim 16 wherein the hydrophobic additives are selected from paraffin wax, microcrystalline wax, petrolatum gel and fatty amide wax.

19. The method according to claim 13 wherein one or more (b) components are present in the composition.

20. The method according to claim 19 wherein the non-curing polybutenes have at least one second such component having a number average molecular weight from 100 112 to 400.

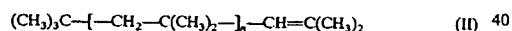
21. The method according to claim 13 wherein the non-aqueous composition is applied to the surface of press rolls.

22. The method according to claim 13 wherein the non-aqueous composition is applied to the surface of press rolls, lump-breaker rolls, couch rolls, uhle box covers, dryer cans, calender rolls, corrugating fluting rolls, or papermaking fabrics.

23. The method according to claim 13 wherein the amount applied and manner of application are sufficient to maintain a uniform coating of the non-aqueous composition on the equipment surface during operation.

24. A method of reducing adhesion to a surface of equipment used in paper manufacture or in paper converting processes, said method characterized in applying a non-curing polybutene composition to such surface, wherein the non-curing polybutene composition comprises

- (a) from 20 to 100 percent by weight of hydrogenated or non-hydrogenated, non-curing polybutenes of the formula



with a number average molecular weight from 400 to 700; and

- (b) from 0 to 80 percent by weight of one or more components selected from

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- (i) non-curing polybutenes of the formula (II) with a number average molecular weight from 100 112 to 400,
- (ii) one or more non-aqueous solvents; and
- (iii) one or more hydrophobic additives.

25. The method according to claim 24 wherein one or more (b) components are present in the composition.

26. A method according to claim 24 wherein the non-curing polybutene with a number average molecular weight from 400 to 700 comprises 50 to 90 percent by weight of the composition.

27. A method according to claim 26 wherein the non-curing polybutenes with a number average molecular weight from 100 112 to 400 comprise 10 to 50 percent by weight of the composition.

28. A method according to claim 26 wherein the one or more non-aqueous solvents comprise 10 to 50 percent by weight of the composition.

29. A method according to claim 26 wherein the hydrophobic additives comprise 1 to 25 percent by weight of the composition.

30. A method according to claim 26 wherein the hydrophobic additives are selected from paraffin wax, microcrystalline wax, and fatty amide wax and comprise 1 to 10 percent by weight of the composition.

31. A method according to claim 24 wherein the non-aqueous solvents are selected from mineral oil, white oil and petroleum distillate.

32. A method according to claim 24 wherein the hydrophobic additives are selected from paraffin wax, microcrystalline wax, petrolatum gel and fatty amide wax.

33. The method according to claim 24 wherein the non-aqueous composition is applied to the surface of press rolls.

34. The method according to claim 24 wherein the non-curing polybutene composition is applied to the surface of press rolls, lump-breaker rolls, couch rolls, uhle box covers, dryer cans, calender rolls, corrugating fluting rolls, or papermaking fabrics.

35. The method according to claim 24 wherein the amount applied and manner of application are sufficient to maintain a uniform coating of the non-aqueous composition on the equipment surface during operation.

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